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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/683,962	10/10/2003	Yee-Chung Fu	KUO-P102-1C	1857
32566	7590	04/05/2005	EXAMINER	
PATENT LAW GROUP LLP 2635 NORTH FIRST STREET SUITE 223 SAN JOSE, CA 95134			LEE, SEUNG H	
			ART UNIT	PAPER NUMBER
			2876	

DATE MAILED: 04/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/683,962

Applicant(s)

FU, YEE-CHUNG

Examiner

Seung H. Lee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. Receipt is acknowledged of the response filed on 23 August 2004, which has been entered in the file.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claims 8-12 and 14-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Tsai (US 6,686,639, of record).

Tsai teaches a MEMS device comprises a scanning mirror (141), a beam structure located between the torsion spring (143) and the mirror wherein the beam structure is connected with the scanning mirror, a plurality of torsion springs (143)

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connected to the to a stationary bond pad (144 and 145) wherein the stationary pad serves as an anchor and a stationary surface wherein the springs connected to the beam structure along rotational axis of the scanning mirror, a stationary comb teeth or structures (131 and 132) in which the stationary comb structure and the rotational comb teeth are interdigitated, the MEMS device can be used in a barcode reader (see Figs. 1-5; col.. 1, lines 37-47; col. 4, line 1- col. 7, line 33).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-7 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsai in view of Conant et al. (US 6,758,983)(hereinafter referred to as 'Conant').

The teachings of Tsai have been discussed above.

Although, Tsai teaches the MEMS comprising a scanning mirror having a beam structure connected to the mirror, he fails to particularly teach or fairly suggest that the beam structure is connected to a plurality of location on the scanning mirror.

However, Conant teaches the MEMS comprising a mirror (40), a combteeth spine (34) connected to a combteeth (32), and torsional hinges (42) wherein the spine

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and the torsional hinges together serves as a beam structure that connected to the mirror (See Figs. 1-2; col. 2, line 49- col. 3, line 21).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to adapt the teachings of Conant to the teachings of Tsai in order to provide an improved MEMS device by separating the holding device or spine of the combteeth with the torsional hinges wherein the torsional hinges are dedicated to restore the mirror position when the voltage is removed and the combteeth spine is dedicated to the control the movement of combteeth.

6. Claims 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsai in view of Conant.

The teachings of Tsai have been discussed above.

Although, Tsai teaches the MEMS comprising a scanning mirror having a beam structure connected to the mirror, he fails to particularly teach or fairly suggest that the beam structure is connected to a plurality of location on the scanning mirror.

However, Conant teaches the MEMS comprising a mirror (40), a combteeth spine (34) connected to a combteeth (32), and torsional hinges (42) wherein the spine and the torsional hinges together serves as a beam structure that connected to the mirror (See Figs. 1-2; col. 2, line 49- col. 3, line 21).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to adapt the teachings of Conant to the teachings of Tsai in order to provide an improved MEMS device by separating the holding device or spine of the

combteeth with the torsional hinges wherein the torsional hinges are dedicated to restore the mirror position when the voltage is removed and the combteeth spine is dedicated to the control the movement of combteeth.

Response to Arguments

7. Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.

In response to applicant argument that "Tsai does not disclose a beam structure connected to multiple locations on a mirror and a spring connected to the beam structure." (see page 5, line 20+), the Examiner respectfully provide a Conant reference wherein Conant discloses a torsional hinges and a combteeth spine connecting to the mirror separately wherein the torsional hinges and the combteeth together serves as a beamstructure as taught by Tsai, that is, it would have been an obvious to separate the beam structure of Tsai into two separate parts (e.g., the torsional hinges and the spine) for providing improved MEMS device as discussed in paragraph 5 above.

In response to applicant argument that "...Accordingly, claim 8 is patentable over Tsai for at least reciting "a plurality of torsion springs each having one end connected to the beam structure, wherein the torsion springs are aligned along a rotational axes of the scanning mirror.."" (see page 6, line 6+) and "... Tsai does not discloses torsion springs connected to the beam structure along its length...." (see page 6, line 20+), the Examiner respectfully disagrees with applicant wherein Tsai discloses the beam structure (i.e., the beam structure is defined in between the mirror and the

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torsion spring) wherein the torsion springs are connected to the beam structure along its length as shown in figure 1. Moreover, applicant appears to be arguing that the plurality of torsion springs are connected to the single beam structure as shown in figure 1B, however, such limitation from the specification and drawings are not read into the claims. Accordingly, given its broadest reasonable interpretation, the teachings of Tsai meet the claimed limitations.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

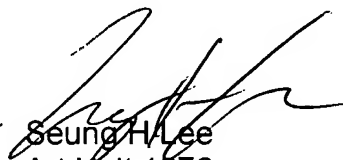
Lee et al. (US 6,628,041), Suzuki (US 5,428,259), and Levitan et al. (US 6,465,929) discloses a MEMS device.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Seung H. Lee whose telephone number is (571) 272-2401. The examiner can normally be reached on Monday-Friday, 7:30 AM- 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Lee can be reached on (571) 272-2398. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Seung H. Lee
Art Unit 1876
March 28, 2005